



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/669,069	12/20/2000	Leif Hakan Claesson	OCTIV-01	2895

22434 7590 01/20/2004  
BEYER WEAVER & THOMAS LLP  
P.O. BOX 778  
BERKELEY, CA 94704-0778

EXAMINER

MICHALSKI, JUSTIN I

ART UNIT PAPER NUMBER

2644

DATE MAILED: 01/20/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/669,069

Applicant(s)

CLAESSON, LEIF HAKAN

Examiner

Justin Michalski

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-5, 11 and 13-17 is/are rejected.
- 7) ☐ Claim(s) 6-10, 12, 18 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 and 8. 6) ☐ Other:

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because: Figure 1 reference numbers do not correlate to description on page 2. Figure 2 reference numbers do not correlate to description on pages 4 and 5. Figure 4 does not correlate to description on page 9. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claim 6 is objected to because of the following informalities: There is no reference 48 in Figure 2. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1, 3, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Brillhart et al. (US Patent 5,303,306).

Regarding Claim 1, Brillhart et al. discloses a dynamics processor comprising (Figure 3): a non-linear automatic gain control (ACG 64) responsive to an input audio signal comprised of a plurality of frequency components (Brillhart et al. discloses input signal from microphone 62 receives sound which would inherently consist of a plurality of frequency components) (Column 6, lines 31-32), each frequency component having associated therewith an amplitude (it is inherent the frequency components would have an associated amplitude), said non-linear ACG adaptive to develop a modified gain audio signal (output of AGC 64); a multiband cross-over device (filters 66 and 80, figure 4 discloses cross-over) responsive to the modified gain audio signal and adaptive to generate 'n' number of signals (output of filters 66 and 80), each of said 'n' signals having an amplitude and further having a unique frequency band associated therewith (signals will have frequency band associated with their respective filter); 'n' number of processing blocks (references 100 and 102), each of which responsive to a respective one of said 'n' signals for modifying the amplitude of the 'n' signals to develop modified 'n' signals (output of references 100 and 102); and a mixer device responsive to said modified 'n' signals and adaptive to combine the same (amp 104), wherein the

amplitude of the plurality of frequencies associated with the audio signal is modified in real-time thereby enhancing the audibility of the audio signal.

Regarding Claim 3, Brillhart et al. further discloses AGC prevents saturation of the amplifier (i.e. AGC does not multiply by a linear factor rather non linearly to prevent saturation) (Column 6, lines 34-38).

Regarding Claim 14, Brillhart et al. discloses a dynamics processor (Figure 3) comprising: non-linear automatic gain control (ACG 64) means responsive to an input audio signal comprised of a plurality of frequency components (Brillhart et al. discloses input signal from microphone 62 receives sound which would inherently consist of a plurality of frequency components)(Column 6, lines 31-32), each frequency component having associated therewith amplitude (it is inherent the frequency components would have an associated amplitude), said non-linear AGC adaptive to develop a modified gain audio signal (output of AGC 64); multiband cross-over means (filters 66 and 80, figure 4 discloses cross-over) responsive to the modified gain audio signal and adaptive to generate 'n' number of signals (output of filters 66 and 80), each of said 'n' signals having an amplitude and further having a unique frequency band associated therewith (signals will have frequency band associated with their respective filter); 'n' number of processing blocks (references 100 and 102), each of which responsive to a respective one of said 'n' signals for modifying the amplitude of the 'n' signals (output of references 100 and 102); and mixer means responsive to said modified 'n' signals and adaptive to combine the same (amp 104), wherein the amplitude of the plurality of frequencies

associated with the audio signal is modified in real-time thereby enhancing the audibility of the audio signal.

Regarding claim 15, Brillhart et al. further discloses AGC prevents saturation of the amplifier (i.e. AGC does not multiply by a linear factor rather non linearly to prevent saturation) (Column 6, lines 34-38).

5. Claim 11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Klayman (US Patent 6,285,767).

Regarding Claim 11, Klayman discloses a method of dynamically processing an audio signal (Figure 13) comprising: receiving an input audio signal (input to reference 1308) comprised of a plurality of frequency components (Klayman discloses enhancing low-frequency sounds which inherently includes a plurality of frequency components) (Column 1, lines 55-57), each frequency component having associated therewith an amplitude (it is inherent a frequency component will have an associated amplitude); modifying the input audio signal (filter 1310); generating 'n' number of signals from said modified input audio signal (outputs of references 1312, 1313, 1314, and 1315), each of said 'n' signals having an amplitude and further having a unique frequency band associated therewith (each signal output of bandpass filter 1312, 1313, 1314, and 1315 will have it's own associated frequency band); modifying the amplitude of the 'n' signals (AGC 1316, 1317, 1318, and 1319); and combining said modified 'n' signals (adder 1320), wherein the amplitude of the plurality of frequencies associated with the audio signal is modified in real-time thereby enhancing the audibility of the audio signal.

Regarding Claim 13, Klayman discloses a computer readable medium having stored therein computer readable program code comprising instructions for performing the following steps (Klayman discloses Figure 2 with a computer system which may use the present invention to improve audio performance) (Column 7, lines 59-63): receiving an input audio signal (input to reference 1308) comprised of a plurality of frequency components (Klayman discloses enhancing low-frequency sounds which inherently includes a plurality of frequency components) (Column 1, lines 55-57), each frequency component having associated therewith an amplitude (it is inherent a frequency component will have an associated amplitude); modifying the input audio signal (filter 1310); generating 'n' number of signals from said modified input audio signal (outputs of references 1312, 1313, 1314, and 1315), each of said 'n' signals having an amplitude and further having a unique frequency band associated therewith (each signal output of bandpass filter 1312, 1313, 1314, and 1315 will have its own associated frequency band); modifying the amplitude of the 'n' signals (AGC 1316, 1317, 1318, and 1319); and combining said modified 'n' signals (adder 1320), wherein the amplitude of the plurality of frequencies associated with the audio signal is modified in real-time thereby enhancing the audibility of the audio signal.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brillhart et al. (US Patent 5,303,306). Brillhart et al. discloses a processor as stated apropos of claim 1 above. Brillhart et al. does not disclose the device adaptive to provide an output for transmission over the Internet. However, one of ordinary skill in the art at the time the invention was made would have known that an audio signal could be transmitted over the Internet.

8. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brillhart et al. as applied to claim 1 above in view of Klayman (US Patent 6,285,767).

Regarding Claim 4, Brillhart et al. discloses a processor as stated apropos of claim 1 above further disclosing a cross-over block (filters 66 and 80) responsive to said input audio signal and adaptive to divide the input audio signal into cross-over signals having two or more frequency bands (Figure 4). Brillhart et al. does not disclose said dynamics processor including additional non-linear AGC's. Klayman discloses an audio enhancement circuit (Figure 13) comprising of additional AGC's (1316 through 1319), each of which responsive to a respective cross-over signal (outputs of 1312 through 1315, see Figure 12a for cross-over), said non-linear AGCs and non-linear AGC developing at least two pre-input mixer signals (outputs of 1316 through 1319). Klayman disclose the AGCs are used to generate an enhancement factor. Therefore, it



would have been obvious to one of ordinary skill in the art at the time the invention was made to include additional AGCs in order to generate an enhancement factor for a higher quality audio signal.

Regarding Claim 5, Klayman further discloses an input mixer device (Figure 13 reference 1320) responsive to said at least two pre-input mixer signals (outputs of 1316 through 1319) for combining the same to develop said modified gain audio signal (signal 1321).

9. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brillhart et al. as applied to claim 14 above, and further in view of Klayman (US Patent 6,285,767).

Regarding Claim 16, Brillhart et al. discloses a processor as stated apropos of claim 14 above further disclosing a cross-over block (filters 66 and 80) responsive to said input audio signal and adaptive to divide the input audio signal into cross-over signals having two or more frequency bands (Figure 4). Brillhart et al. does not disclose the processor including additional non-linear AGC's. Klayman discloses an audio enhancement circuit (Figure 13) comprising of additional AGC's (1316 through 1319), each of which responsive to a respective cross-over signal (outputs of 1312 through 1315, see Figure 12a for cross-over), said non-linear AGCs and non-linear AGC developing at least two pre-input mixer signals (outputs of 1316 through 1319). Klayman disclose the AGCs are used to generate an enhancement factor. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

Art Unit: 2644

made to include additional AGCs in order to generate an enhancement factor for a higher quality audio signal.

Regarding Claim 17, Klayman further discloses an input mixer device (Figure 13 reference 1320) responsive to said at least two pre-input mixer signals (outputs of 1316 through 1319) for combining the same to develop said modified gain audio signal (signal 1321).

#### ***Allowable Subject Matter***

10. Claims 6-10, 12, 18, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lindemann et al. discloses audio compressor with cross over circuit (Figure 7 and 2).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

Application/Control Number: 09/669,069  
Art Unit: 2644

Page 10

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

JIM

  
**XU MEI**  
**PRIMARY EXAMINER**